



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,169	09/16/2005	Takashi Kikukawa	277944US28X PCT	5270
22850	7590	08/06/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER HIGGINS, GERARD T	
			ART UNIT	PAPER NUMBER
			1794	
			NOTIFICATION DATE	DELIVERY MODE
			08/06/2008	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/519,169	<b>Applicant(s)</b> KIKUKAWA ET AL.	
	<b>Examiner</b> GERARD T. HIGGINS	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment filed 05/07/2008 has been entered. Currently claims 1-7 are pending and claim 8 is cancelled.

### ***Drawings***

2. The requested drawings were received on 05/07/2008. These drawings are acceptable.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji et al., A Near-Field Recording and Readout Technology Using a Metallic Probe in an Optical Disk, in view of Nagase et al. (JP 2002-109786).

A Near-Field Recording and Readout Technology Using a Metallic Probe in an Optical Disk sets forth the optical disk structure of Figure 1, which is equivalent to applicants' claims 1-6. It includes recording marks with a recording length shorter than

$0.37\lambda / NA$ , wherein marks of less than 100 nm using a laser with a NA of 0.6 and  $\lambda = 635$  nm [i.e.  $(0.37 * 635)/(0.6)$ ], and it also operates by decomposition of noble metal oxides, which would intrinsically form oxygen gas that would deform the metal oxide layer; however, it fails to disclose a recording medium that undergoes irreversible changes in the noble metal oxide layer when irradiated with light.

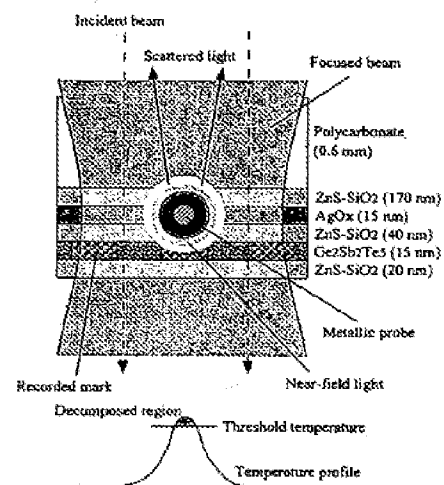


Fig. 1. Cross section of a new disk. Silver oxide film is used as the readout layer, instead of an Sb film.

Nagase et al. teach a super-resolution recording and reproducing technique, which operates by causing an “irreversible change and forms an optical opening smaller than spot size in a light spot center section was provided by irradiating with light of intensity of a recording level once” [0007]. Nagase et al. also teach “a super-resolution-reproducing film which forms an optical opening smaller than spot size in a light spot center section was provided by irradiating with light of intensity of a regeneration level” [0008].

Since Fuji et al., A Near-Field Recording and Readout Technology Using a Metallic Probe in an Optical Disk and Nagase et al. are both drawn to super-resolution

optical recording and reproduction, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make use of the known improvement technique of irreversibly changing the recording layer on the base device of Fuji et al. The results of this improvement technique on the base device of Fuji et al. would have been obvious to one having ordinary skill in the art of optical recording disc manufacture. The motivation for having done so would be to provide a recording medium that could preserve the information recorded therein for a longer period of time. This would afford recording materials that would be of higher capacity, but with the same stability as present CD-R type materials.

With regard to claim 7, reflective layers are well known to be placed at any place in an optical recording medium stack, and in fact Nagase et al. use a reflective layer in their irreversible optical recording medium [0009]. It would have been obvious to one having ordinary skill in the art of optical recording media to include a reflective layer in the device of Fuji et al. at any point in the recording stack to facilitate an increased signal-to-noise of the recording medium.

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

Art Unit: 1794

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-7 are directed to an invention not patentably distinct from claims 11-14 of commonly assigned Application No. 10/562,901 and claims 1-5, 8, and 9 of commonly assigned Application No. 10/563,012. Specifically, please see sections 6 and 7 below.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned applications, discussed in sections 11-14 below, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon

the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

6. Claims 1-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11-14 of copending Application No. 10/562,901. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim a recording method for recording data onto an optical recording medium, which comprise a noble metal oxide recording layer sandwiched by the various dielectric layers; however, they fail to include a recording mark of less than  $(0.37 * \lambda)/NA$  and specific recording powers. It would have been obvious to one having ordinary skill in the art to vary the laser wavelength to shorter wavelengths because that is one of the options available to optical recording media to increase the density of recording marks; further, it would have been obvious to experimentally vary the recording power to another power that would be appropriate for applicants' intended use.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. Claims 1-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8 and 9 of copending Application No. 10/563,012. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim a recording method for

Art Unit: 1794

recording data onto an optical recording medium, which comprise a noble metal oxide recording layer sandwiched by the various dielectric layers. Specifically, they claim a recording layer comprised of  $\text{PtO}_x$ ; however, it fails to include a recording mark of less than  $(0.37 * \lambda)/\text{NA}$ . It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary each of the individual thicknesses of all of the layers (dielectric, phase-change, and noble metal oxide layer) to any thickness of applicants' intended use. It is well-known in the optical recording media arts to vary the thicknesses of individual layers to adjust the amount of reflection of laser light or control the heat generated amongst the layers; furthermore, it would have been obvious to one having ordinary skill in the art to vary the laser wavelength to shorter wavelengths because that is one of the options available to optical recording media to increase the density of recording marks.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Response to Arguments***

8. Applicant's arguments, see Remarks, filed 05/07/2008, with respect to the objections to Figure 1 and 14, the objections to the specification, the rejection of claims 1-7 under 35 U.S.C. 112, second paragraph, the rejection of claim 8 under 35 U.S.C. 102(b) as being anticipated by Sato (JP 06-262854), the rejection of claim 8 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 10/561,090, the rejection of claim 8 on the



ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 7 of copending Application No. 10/561,096, the rejection of claim 8 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 10/561,408, and the rejection of claim 8 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/581,633 have been fully considered and are persuasive. The relevant objections/rejections have been withdrawn.

9. Applicant's arguments filed 05/07/2008 have been fully considered but they are not persuasive.

Applicants are arguing that it would not have been obvious to one having ordinary skill in the art to make the super-resolution recording medium of Fuji et al. comprise an irreversible chemical change as taught in the super-resolution recording media of Nagase et al.; specifically, applicants argue since Nagase et al. do not teach noble metal oxides one of ordinary skill would not be motivated to use the recording technique of Nagase et al.

The Examiner respectfully disagrees. The devices of Nagase et al. and Fuji et al. are both drawn to super-resolution recording media, and therefore the Examiner deems it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply this improvement technique of irreversibly changing the recording layer of Nagase et al. to the noble metal oxide super-resolution recording layer as seen in Fuji et al. The motivation for having done so would be to provide a

recording medium that could preserve the information recorded therein for a longer period of time. This would afford recording materials that would be of higher capacity, but with the same stability as present CD-R type materials.

10. With regard to the rejection of claims 1-7 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11-14 of copending Application No. 10/562,901 and claims 1-7 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8 and 9 of copending Application No. 10/563,012, the Examiner did concede the claims were not identical; however, the Examiner provided a rationale for why they are obvious over each other. The amendment filed by applicants has served to clarify the claims in view of the previous rejection under 35 U.S.C. 112, second paragraph. All the original rejections made by the Examiner were made in light of this unclear language. As such, the present rejections stand and have been repeated in this office action in sections 6 and 7 above.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERARD T. HIGGINS whose telephone number is (571)270-3467. The examiner can normally be reached on M-F 7:30am-5pm est. (1st Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gerard T Higgins, Ph.D.  
Examiner  
Art Unit 1794

/Gerard T Higgins, Ph.D./  
Examiner, Art Unit 1794

/Callie E. Shosho/  
Supervisory Patent Examiner, Art Unit 1794